



Environment Canada **Environnement Canada**

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Via Email

RE: 2BE-NAD – Commander Resources Ltd. – Nadluardjuk Lake Project - Renewal

On behalf of Environment Canada (EC), I have reviewed the above mentioned application. The following specialist advice has been provided pursuant to Environment Canada's mandated responsibilities for the enforcement of the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

Commander Resources Ltd. is applying for a licence renewal for water use and waste disposal associated with exploratory drilling and camp operations for its Nadluardjuk Lake Project. Project activities occur on a seasonal basis, utilizing a field camp that is adjacent to the FOX-3 North Warning System site on the western shore of the Dewar River/Lake system. Personnel and needed supplies will be delivered to the site by fixed wing aircraft and a helicopter will support exploration activities. The project area is within latitudes of 68°30'N to 68°40'N and longitudes of 71°W to 73°W and is known to have gold and base metal deposits. The camp has a coordinate of 68°38'N, 71°08'W and is 220 km southwest of Clyde River and 320 km northwest of Qikiqtarjuaq.

The proponent requests a water licence which permits the daily use of 30,000 L to support drilling operations and 60 L per person for domestic purposes. The camp can accommodate 25 people at any given time. Drilling operations will consume water from nearby sources and domestic water will be obtained from the Dewar River. Land based drill sites will be positioned at least 30 m from any water source and drill water and cuttings will be directed to natural depressions. The proponent intends to deposit drill cuttings from ice-based drilling operations on land in areas that are away from nearby water bodies. Sewage and gray water will be directed to separate sumps. The sewage sump will receive lime treatment and be backfilled at the end of the field season.

Combustible camp wastes will be incinerated in a modified fuel drum. Those wastes which cannot be burned will be delivered to Iqaluit for proper disposal along with the burn-barrel's ashes, damaged empty fuel drums, and waste oil.

Fuel products will be stockpiled in a fuel cache nearby the camp facilities. Liquid fuels will be contained in 205 L steel drums. The quantity of fuel products that will be made available are as follows: 20,500 L of diesel (100 drums), 51,250 L of Jet-A (250 drums), 820 L of gasoline (4 drums), and 40 propane tanks. The project has a Spill Contingency Plan and all spills will be documented and reported to the 24 hour Spill Report Line at (867) 920-8130.



Environment Canada recommends that any cuttings and sludge produced from drilling operations, whether land or ice-based, be either buried within sumps or removed from the project area for proper disposal. The proponent shall ensure that no drill cuttings or sludge are directed to natural water bodies frequented by fish.

Environment Canada recommends that the project's Spill Contingency Plan be revised to present appropriate spill response kit information, a map identifying the main fuel cache in relation to camp facilities, and Environment Canada's Territorial contact information.

- The content and storage location of spill response kits should be presented in the Plan. The completed supplementary questionnaire indicates that kits will be made available at all fuel caches, alongside drilling rigs, and at the camp. It is appreciated that this information was communicated in the licence renewal application but it should be clearly indicated in the Plan.
- Having a map which presents the position of the main fuel cache in relation to the camp facilities would be a valuable component of demonstrating how the project's fuel supply will be managed.
- Environment Canada's Environment Enforcement Officer based in Iqaluit, Jimmie Noble, should be listed as an emergency contact when reporting hazardous material spills. Noble can be contacted by office telephone (867) 975-4644, cell phone (867) 975-1925, and secure fax-line (867) 975-4594.

It is suggested that the project's Reclamation Plan include seasonal shutdown procedures. These procedures address the management of camp facilities and drilling sites at the end of a project's field season (e.g., making the domestic gray water sump inaccessible to wild life, draining and storing water lines, and backfilling of any sumps or natural depressions used to deposit drill cuttings). The project area should be left in a secure condition which will not produce any foreseeable adverse environmental effects.

Environment Canada recommends the following conditions be applied throughout all stage of the project:

GENERAL

- The proponent shall not deposit, nor permit the deposit of any fuel, drill cuttings, chemicals, wastes, or sediment into any water body. According to the *Fisheries Act*, Section 36(3), **the deposition of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any other deleterious substance that results from the deposit of the deleterious substance, may enter any such water, is prohibited.**
- Section 35 of the *Migratory Bird Regulations* states that **no person shall deposit nor permit to be deposited, oil, oil wastes or any other substance harmful to migratory birds in any waters or any area frequented by migratory birds.** Therefore, Environment Canada recommends that sumps be backfilled or made otherwise inaccessible to migratory birds prior to their arrival in spring and that the proponent ensure that all spills are thoroughly cleaned-up.

DRILLING

- Environment Canada would like to inform the proponent that the *Canadian Environmental Protection Act* has listed CaCl as a toxic substance. The proponent shall therefore ensure that if CaCl is used as a drill additive, all sumps containing CaCl are properly constructed and located in such a manner as to ensure that the contents will not enter any water body.



- Drilling additives or muds shall not be used in connection with holes drilled through lake ice unless they are re-circulated or contained such that they do not enter the water, or demonstrated to be non-toxic.
- For 'on-ice' drilling, return water released must be non-toxic, and not result in an increase in total suspended solids in the immediate receiving waters above the Canadian Council of Ministers of the Environment Guidelines for the Protection of Freshwater Aquatic Life (i.e., 10 mg/L for lakes with background levels under 100 mg/L, or 10% for those above 100 mg/L).
- Land based drilling should not occur within 30 m of the high water mark of any water body. Drilling wastes should be disposed of in a sump such that the contents do not enter any water body.
- If an artesian flow is encountered, the drill hole shall be immediately plugged and permanently sealed.

CAMPS

- The proponent shall not store materials on the surface ice of lakes or streams, except that which is for immediate use.
- Environment Canada recommends the use of an approved incinerator for the disposal of combustible wastes.
- The proponent shall ensure that any-non combustible waste is disposed of appropriately at an approved facility.
- Any sumps, including those created for the disposal of drill cuttings, shall be located above the high water mark of any water body and in such a manner as to prevent the contents from entering any water body frequented by fish. Further, all sumps shall be backfilled upon completion of the field season and contoured to match the surrounding landscape.

FUEL STORAGE / SPILL CONTINGENCY / HAZARDOUS MATERIALS

- All fuel caches shall be located above the high water mark of any water body. Further, EC recommends the use of secondary containment, such as self-supporting insta-berms, when storing barreled fuel on location rather than relying on natural depressions.
- The proponent shall ensure that any hazardous materials, including waste oil, receive proper treatment and disposal at an approved facility.

MIGRATORY BIRDS

- Environment Canada recommends that all activities be conducted outside the migratory bird breeding season, which extends from approximately 15 May to 1 August. These dates are approximate, and if active nests (i.e., nests containing eggs or young) are encountered outside of these dates, the proponent should avoid the area until nesting is complete (i.e., the young have left the nest). Paragraph 6(a) of the *Migratory Bird Regulations* states that **no one shall disturb or destroy the nests of migratory birds.**
- In order to mitigate potential effects and minimize disturbance, any aircraft used in conducting project activities should maintain a horizontal distance of 2 km and a vertical distance of 610 m from any observed groups (colonies) of migratory birds.



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If there are any changes in the proposed project, EC should be notified, as further review may be necessary. Please do not hesitate to contact me if you have any questions or comments with regards to the foregoing at (867) 975-4631 or by email via david.abernethy@ec.gc.ca.

Sincerely,

David W. Abernethy
Environmental Assessment Technician

CC. Colette Spagnuolo – Environmental Assessment / Contaminated Sites Specialist, Environment Canada, Iqaluit